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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/621,112	Applicant(s) GELMAN ET AL.	
	Examiner RICHARD G. KEEHN	Art Unit 2456	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 December 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. **Claims 1-53 have been examined and are pending.**

2. **Claims 52 and 53 are new.**

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/18/2009 has been entered.

Response to Arguments

4. Applicant's arguments, see page 16, filed 12/18/2009, with respect to the rejection of Claims 1, 50 and 51 under 35 U.S.C. 112 have been fully considered and are persuasive. The rejection of Claims 1, 50 and 51 under 35 U.S.C. 112 has been withdrawn.

5. Applicant's arguments with respect to claims 1-53 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1 and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 1 recites the limitation " the node element having a local data store that is populated with information supplied via said ***local port*** and is accessible via said global port " in the third limitation. There is insufficient antecedent basis for this limitation (local port) in the claim.

b. Claim 42 recites the limitation "the local control protocol of the apparatus" in the last limitation. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-4, 6-48 and 52-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,944,555 B2 (Blackett et al.), and further in view of US 7,124,397 B1 (Mathur et al.).

As to Claim 1, Blackett et al. disclose in an electric power network, an advanced communications system employing an atomic communications system architecture, comprising:

a node element deployable on said electric power network and having a global port and an inward port (Fig. 3b and Column 5, line 62 through Column 6, line 23 disclose the IED in an electric power network with ports connected to the power source for monitoring and the network to communicate with other devices on the network) the node element having a global data store that is populated with information supplied via said global port and is accessible via said inward port (Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to other nodes, hence each port has access to the other port's memory contents. Column 13, lines 13-19 disclose the collection of data from the port connected to the network components or to other IED's);

the node element having a local data store that is populated with information supplied via said local port and is accessible via said global port (Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to other nodes, hence each port has access to the other port's memory contents. Column 11, lines 47-59 disclose the memory used to store data from the local power management port and the use of the IED as a communications device with other IED devices);

the node element being configured to selectably support at least one of three planes of interaction using the information maintained within said global and inward data stores (Column 12, lines 1-22 disclose the power management application components including peer-to-peer communication, power control and monitoring components that can operate together or selectively in any combination):

a power analysis plane of interaction (Column 5, line 62 through Column 6, line 23 disclose the IED performing power analysis),

a data plane of interaction (Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports; Blackett et al. disclose the networking of IED which contain communication devices and sharing data among said devices, therefore one device's communication interface is exposed to any connecting device - See Blackett et al. Figures 1 and 2a), and

a control plane of interaction (Column 5, line 62 through Column 6, line 23 disclose the IED controlling its associated load; Blackett et al. disclose the controlling interface of an IED (Figure 2a, element 220),

wherein the node element allows a plurality of load devices to exchange data, through the node element (Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports; Blackett et al. disclose the networking of IED which contain communication devices and sharing data among said devices, therefore one device's communication interface is exposed to any connecting device - See Blackett et al. Figures 1 and 2a).

Blackett et al. do not disclose the electric power network having a plurality of hierarchy levels; and wherein the node element includes a proxy having a universal format interface that makes available a local control interface of a first local load device available and that allows remote control of the first load device, through the universal format interface, using a universal format different from a local control protocol of the first load device; and using respective different protocols of the load devices.

However Mathur et al. disclose

the electric power network having a plurality of hierarchy levels (Mathur et al. disclose the multi-layer power management approach in Figure 1 and associated text, elements 12, 30, 50, 70 and 100); and

using respective different protocols of the load devices (Mathur et al. disclose the different load device protocols – Column 3, lines 13-20);

wherein the node element includes a proxy having a universal format interface that makes available a local control interface of a first local load device available and that allows remote control of the first load device, through the universal format interface, using a universal format different from a local control protocol of the first load device (Mathur et al. disclose the universal interface – Column 3, lines 13-20; and remote control of the IED devices – Column 1, lines 20-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the electric power network having a plurality of hierarchy levels; and wherein the node element includes a proxy having a universal format interface that makes available a local control interface of a first local load device available and that allows remote control of the first load device, through the universal format interface, using a universal format different from a local control protocol of the first load device; and using respective different protocols of the load devices taught by Mathur et al., with IED communication and control taught by Blackett et al., in order to provide remote control for the IED (Mathur et al. – Claim 1).

As to Claim 2, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1 wherein said node element is implemented using modular blocks providing sets of features that can be selectively included or excluded (Column 12, lines 1-22 disclose the power management application components including peer-to-peer communication, power control and monitoring components that can operate together or selectively in any combination).

As to Claim 3, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1 wherein said node element is adapted to selectively enable and disable selected ones of said planes of interaction (Column 12, lines 1-22 disclose the power management application components including peer-to-peer communication, power control and monitoring components that can operate together or selectively in any combination).

As to Claim 4, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 2 wherein said sets of features include features to selectively enable and disable said planes of interaction (Column 12, lines 1-22 disclose the power management application components including peer-to-peer communication, power control and monitoring components that can operate together or selectively in any combination).

As to Claim 6, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1 wherein said local data store is configured to store aggregate information that is periodically updated(Column 5, lines 37-41 disclose monitoring which is the collection of aggregate data over periodic intervals. Column 16, lines 49-55 disclose the periodic update of consumption data at pre-defined time intervals).

As to Claim 7, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1 wherein said local data store is configured to store local interface information about with a device associated with said node element (Column 5, line 62 through Column 6, line 23 disclose the IED holding device information until a polling request is made. Column 11, lines 47-59 disclose the memory used to store data from the local power management port and the use of the IED as a communications device with other IED devices).

As to Claim 8, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1 wherein a first node element is configured to acquire local interface information about a device associated with said node element and to propagate that local interface information to another node element on said electric power network (Column 5, line 62 through Column 6, line 23 disclose the IED collecting local device information and pushing the data onto the network).

As to Claim 9, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 8 wherein said first node element acquires local interface information through said inward port and propagates said local interface information through said global port (Fig. 3b discloses the IED's input and output ports as load monitoring and communication ports respectively in this embodiment).

As to Claim 10, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1 wherein said node element implements said power analysis plane of interaction to collect and disseminate power quality of service information (Column 5, line 62 through Column 6, line 23 disclose the collection and analysis of power information and the dissemination onto the network).

As to Claim 11, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1 wherein said node element implements said data plane of interaction to couple a device associated with said node element to an external source of information (Column 5, line 62 through Column 6, line 23 disclose the coupling of the local device to the network devices via the IED).

As to Claim 12, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 11 wherein said external source of information is the internet (Column 6, lines 38-54 disclose the use of internet communication).

As to Claim 13, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1 wherein said node element implements said control plane of interaction to control a device associated with said node element (Column 5, line 62 through Column 6, line 23 disclose the IED controlling electric power distribution).

As to Claim 14, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1 wherein said node element implements said power analysis plane of interaction and said control plane of interaction to assess power conditions on said electric power network and to control a device associated with said node element to meet a predefined objective (Column 5, line 62 through Column 6, line 23 disclose the power analysis and control to meet the power management objectives).

As to Claim 15, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1 wherein said predefined objective is a self-healing objective to selectively control power consumption to thereby balance load on said electric power network (Column 36, line 49 through Column 37, line 2 disclose IED's re-routing power based on a self-healing algorithm).

As to Claim 16, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1 wherein said node element implements a proxy mechanism whereby a device associated with said node may be controlled by entities external to said device that are coupled to said electric power network (Column 27, lines 41-52 disclose the transport box in one embodiment that works with the IED to communicate information with the network external devices).

As to Claim 17, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1 wherein said node element implements data encryption to control access to information via said global port (Column 4, lines 29-32 and Claims 5, 40 and 59 disclose the use of encryption for security purposes).

As to Claim 18, Blackett et al. disclose an appliance for coupling to an electric power network, comprising:

an appliance processor that supports an appliance control interface having an associated data store of appliance control data (Column 5, line 62 through Column 6, line 23 discloses power monitoring and control modules);

a node element having a global port coupled to said electric power network and an inward port configured to access said data store of appliance control data (Column 5, line 62 through Column 6, line 23 disclose the IED, a two-port device coupled to an electric power network and having data monitoring and control capabilities);

the node element being configured to propagate said appliance control interface though said global port thereby allowing access to said data store of appliance control data from the electric power network (Fig. 17 and Column 6, lines 38-54 disclose the IED acting as a data sharing network node capable of sharing data about its associated device or sub-network of devices).

Blackett et al. do not explicitly disclose having an embedded proxy component. However Mathur et al. disclose

having an embedded proxy component (Marthur et al disclose the universal relay device - Col.3, lines 13-19).

The motivation and obviousness arguments are the same as in Claim 1.

As to Claim 19, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 18 wherein said node element is configured to selectably support at least one of three planes of interaction using the information maintained within said global and local data stores (Column 12, lines 1-22 disclose the power management application components including peer-to-peer communication, power control and monitoring components that can operate together or selectively in any combination):

a power analysis plane of interaction (Column 5, line 62 through Column 6, line 23 disclose the IED performing power analysis),

a data plane of interaction (Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports), and

a control plane of interaction (Column 5, line 62 through Column 6, line 23 disclose the IED controlling its associated load).

As to Claim 20, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 18 wherein said node element is implemented using modular blocks providing sets of features that can be selectively included or excluded (Column 12, lines 1-22 disclose the power management application components including peer-to-peer communication, power control and monitoring components that can operate together or selectively in any combination).

As to Claim 21, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 19 wherein said node element is adapted to selectively enable and disable selected ones of said planes of interaction (Column 12, lines 1-22 disclose the power management application components including peer-to-peer communication, power control and monitoring components that can operate together or selectively in any combination).

As to Claim 22, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 18 wherein said node element further includes a global data store that is populated with information supplied via said global port and is accessible via said local port (Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along

information to other nodes, hence each port has access to the other port's memory contents. Column 13, lines 13-19 disclose the collection of data from the port connected to the network components or to other IED's).

As to Claim 23, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 22 wherein said global data store is configured to store aggregate information that is periodically updated (Column 5, lines 37-41 disclose monitoring which is the collection of aggregate data over periodic intervals. Column 16, lines 49-55 disclose the periodic update of consumption data at pre-defined time intervals).

As to Claim 24, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 18 wherein said node element further includes a local data store that is populated with information supplied via said local port and is accessible via said global port (Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to other nodes, hence each port has access to the other port's memory contents. Column 11, lines 47-59 disclose the memory used to store data from the local power management port and the use of the IED as a communications device with other IED devices).

As to Claim 25, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 24 wherein said local data store is configured to store aggregate

information that is periodically updated (Column 5, lines 37-41 disclose monitoring which is the collection of aggregate data over periodic intervals. Column 16, lines 49-55 disclose the periodic update of consumption data at pre-defined time intervals).

As to Claim 26, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 24 wherein said local data store is configured to store local interface information about with a device associated with said node element (Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to other nodes, hence each port has access to the other port's memory contents. Column 11, lines 47-59 disclose the memory used to store data from the local power management port and the use of the IED as a communications device with other IED devices)

As to Claim 27, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 18 wherein said node element implements a power analysis plane of interaction to collect and disseminate power quality of service information (Column 5, line 62 through Column 6, line 23 disclose power analysis and dissemination by the IED).

As to Claim 28, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 18 wherein said node element implements a data plane of interaction to couple said appliance to an external source of information (Fig. 17 and Column 6,

lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to other nodes, hence each port has access to the other port's memory contents).

As to Claim 29, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 28 wherein said external source of information is the internet (Column 6, lines 38-54 disclose the internet communication).

As to Claim 30, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 18 wherein said node element implements a control plane of interaction whereby said appliance may be controlled by information input through said node element (Column 5, line 62 through Column 6, line 23 disclose the IED distributed control features).

As to Claim 31, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 18 wherein said node element implements a power analysis plane of interaction and a control plane of interaction to assess power conditions on said electric power network and to control said appliance to meet a predefined objective (Column 5, line 62 through Column 6, line 23 disclose the power analysis and control features of the IED to meet the power management objectives).

As to Claim 32, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 18 wherein said predefined objective is a self-healing objective to selectively control power consumption to thereby balance load on said electric power network (Column 36, line 49 through Column 37, line 2 disclose IED's re-routing power based on a self-healing algorithm).

As to Claim 33, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 18 wherein said node element implements a proxy mechanism whereby said appliance may be controlled by entities external to said appliance that are coupled to said electric power network (Column 27, lines 41-52 disclose the transport box in one embodiment that works with the IED to communicate information with the network external devices).

As to Claim 34, the combination of Blackett et al. and Mathur et al. discloses the appliance of claim 18 wherein said node element implements data encryption to control access to information via said global port (Column 4, lines 29-32 and Claims 5, 40 and 59 disclose the use of encryption for security purposes).

As to Claim 35, Blackett et al. disclose a method for facilitating interactions among a plurality of devices having at least one of power and analysis monitoring, control and communications capabilities and coupled to one another over a utility power network, the method comprising:

providing each of the devices with an inward port for establishing at least one of a power and analysis monitoring, control and communications link with at least one second device of the plurality of devices which is located downstream in the network (Column 5, line 62 through Column 6, line 23 disclose the IED's power monitoring, analysis and control. Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to other nodes, hence each port has access to the other port's memory contents);

providing each of the devices with a global port for establishing at least one of a power and analysis monitoring, control and communications link with at least one third device of the plurality of devices which is located upstream in or at a same network layer portion of the network (Column 5, line 62 through Column 6, line 23 disclose the IED's power monitoring, analysis and control. Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to other nodes, hence each port has access to the other port's memory contents); and

providing each of the devices with at least one globally available local interface, wherein the globally available local interface extracts interaction data from the links established at the global port or the inward port and processes the interaction data to identify source and destination devices corresponding to the established links and to identify at least one of distributed computing instructions, data aggregation instructions, device control instructions and aggregated data clusters, wherein the globally available

local interface universally formats at least a portion of the interaction data associated with the link established at the inward port for transmission to at least one of the second device and the third device (Column 5, line 62 through Column 6, line 23 disclose data aggregation via monitoring and device control. Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to, and receive information from, other nodes, hence each port has access to the other port's memory contents).

Blackett et al. do not explicitly disclose providing each of the devices with an embedded proxy component having a universal format interface that makes available said local interface through which remote control of the device may be effected using said universal format. However Mathur et al. disclose

providing each of the devices with an embedded proxy component having a universal format interface that makes available said local interface through which remote control of the device may be effected using said universal format (Mathur et al. disclose the universal interface – Column 3, lines 13-20; and remote control of the IED devices – Column 1, lines 20-42).

The motivation and obviousness arguments are the same as in Claim 1.

As to Claim 36 the combination of Blackett et al. and Mathur et al. discloses the method of claim 35, wherein the device control instructions include information concerning potential or actual faults in the network and at least one alternative for transferring transmission of at least one of power and communications signal energy

associated with a first segment of the network to a second segment of the network, thereby self healing the network (Column 36, line 49 through Column 37, line 2 disclose IED's re-routing power based on a self-healing algorithm).

As to Claim 37, the combination of Blackett et al. and Mathur et al. discloses the method of claim 35 further comprising:

aggregating data received from the second device in accordance with the aggregating data instructions (Column 5, lines 36-41 disclose IED's exchanging monitoring, protection and control information);

formatting the aggregated data into a universal format (Column 6, lines 38-54 disclose the TCP/IP universal formatting); and

transmitting the universally formatted aggregated data from the global port to the third device (Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to, and receive information from, other nodes, hence each port has access to the other port's memory contents).

As to Claim 38, the combination of Blackett et al. and Mathur et al. discloses the method of claim 35 further comprising:

processing service data received at the inward port from the second device or first level processed data received at the global port from the third device in accordance with the distributed computing instructions (Column 5, lines 36-41 and Column 5, line 62

through Column 6, line 23 disclose IED's processing data from the IED's device and with interaction/commands from external network devices).

As to Claim 39, the combination of Blackett et al. and Mathur et al. discloses the method of claim 35 further comprising:

aggregating universally formatted data received from the third device in accordance with the aggregating data instructions (Column 5, lines 36-41 disclose IED's exchanging monitoring, protection and control information); and

transmitting the aggregated universally formatted data to at least one of the second device and the third device (Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to, and receive information from, other nodes, hence each port has access to the other port's memory contents).

As to Claim 40, the combination of Blackett et al. and Mathur et al. discloses the method of claim 35 further comprising:

processing interaction data received from the second device or the third device and routing the interaction data to the destination indicated in accordance with real time data transmission criteria included in the interaction data (Fig. 7 discloses IED 711 processing data from IED 712 or IED 714 and sending to Power utility 700).

As to Claim 41, the combination of Blackett et al. and Mathur et al. discloses the method of claim 35, wherein at least one of the global port and inner port is adapted to support at least one of a power and analysis monitoring, control and communications link and different protocols and different media (Column 5, line 62 through Column 6, line 23 disclose power analysis monitoring, control and communication).

As to Claim 42, Blackett et al. disclose a node element apparatus for facilitating interactions among a plurality of devices having at least one of power and analysis monitoring, control and communications capabilities and coupled to one another over a ultility power network, the apparatus comprising:

an inward port for establishing at least one of a power and analysis monitoring, control and communications link with at least a second device of the plurality of devices which is located downstream in the network (Column 5, line 62 through Column 6, line 23 disclose power analysis monitoring and control. Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to other nodes, hence each port has access to the other port's memory contents)

a global port for establishing at least one of a power and analysis monitoring, control and communications link with at least a third device of the plurality of devices which is contained in an upstream portion or a same network layer portion of the network (Column 5, line 62 through Column 6, line 23 disclose power analysis monitoring and control. Fig. 17 and Column 6, lines 38-54 disclose the IED service the

purpose of multi-node communication using its ports, which contain memory, to pass along information to other nodes, hence each port has access to the other port's memory contents); and

at least one globally available local interface coupled to the global port and the inward port, wherein the globally available local interface extracts interaction data from the links established at the global port or the inward port and processes the interaction data to identify source and destination devices corresponding to the established links and to identify at least one of distributed computing instructions, data aggregation instructions, device control instructions and aggregated data clusters, wherein the globally available local interface universally formats at least a portion of the interaction data associated with the link established at the inward port for transmission to at least one of the second device and the third device (Column 5, line 62 through Column 6, line 23 discloses data aggregation via monitoring, power control. Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to other nodes, hence each port has access to the other port's memory contents).

Blackett et al. do not disclose wherein the apparatus includes an embedded proxy component having a universal format interface that makes available a local interface and that allows remote control of the apparatus through the universal format interface using a universal format different from the local control protocol of the apparatus. However Mathur et al. disclose

wherein the apparatus includes an embedded proxy component having a universal format interface that makes available a local interface and that allows remote control of the apparatus through the universal format interface using a universal format different from the local control protocol of the apparatus (Mathur et al. disclose the universal interface – Column 3, lines 13-20; and remote control of the IED devices – Column 1, lines 20-42).

The motivation and obviousness arguments are the same as in Claim 1.

As to Claim 43, the combination of Blackett et al. and Mathur et al. discloses the apparatus of claim 42 further comprising:

a local structured aggregate module for aggregating data received at the inward port in accordance with the aggregating data instructions, formatting the aggregated data into a universal format, and transmitting the universally formatted aggregated data from the global port to the third device (Fig. 17 and Column 5, line 62 through Column 6, line 54 disclose power monitoring of an IED's device, formatting into TCP/IP and transmitting to other IED's on the network).

As to Claim 44, the combination of Blackett et al. and Mathur et al. discloses the apparatus of claim 42 further comprising:

a global structured aggregate module for aggregating universally formatted data received from a plurality of the third devices and transmitting the globally aggregated universally formatted data to at least one of the third devices (Fig. 17 and Column 6,

lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to other nodes, hence each port has access to the other port's memory contents).

As to Claim 45, the combination of Blackett et al. and Mathur et al. discloses the apparatus of claim 42 further comprising:

a global structured aggregate module for processing service data received at the inward port from the second device or first level processed data received at the global port from the third device in accordance with the distributed computing instructions (Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to other nodes, hence each port has access to the other port's memory contents).

As to Claim 46, the combination of Blackett et al. and Mathur et al. discloses the apparatus of claim 42, wherein the device control instructions include information concerning potential or actual faults in the network and at least one alternative for transferring transmission of at least one of power and communications signal energy associated with a first segment of the network to a second segment of the network, thereby self healing the network (Column 36, line 49 through Column 37, line 2 disclose IED's re-routing power based on a self-healing algorithm).

As to Claim 47, the combination of Blackett et al. and Mathur et al. discloses the apparatus of claim 42, wherein the globally available local interface processes interaction action received from the second device or the third device and routes the interaction data to a destination device in the network in accordance with real time data transmission criteria included in the interaction data (Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to other nodes, hence each port has access to the other port's memory contents) and (2)

As to Claim 48, the combination of Blackett et al. and Mathur et al. discloses the apparatus of claim 42, wherein at least one of the global port and the inner port is adapted to support at least one of a power and analysis monitoring, control and communications link having different data signal protocols and on different media. (Column 5, line 62 through Column 6, line 23 disclose power analysis, monitoring and control. Fig. 17 and Column 6, lines 38-54 disclose the IED service the purpose of multi-node communication using its ports, which contain memory, to pass along information to other nodes, hence each port has access to the other port's memory contents).

As to Claim 52, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1,

wherein the universal format interface of the proxy is at a first hierarchy level different from the level of the first local load device and allows remote control of the first

local load device at the first hierarchy level (Mathur et al. disclose that the remote control device and IED are on different Hierarchy levels – Figure 1, elements 12, 100).

The motivation and obviousness arguments are the same as in Claim 1.

As to Claim 53, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1,

wherein the node element retrieves and stores data from each of a first plurality of devices using a respective different protocol of that device (Mathur et al. discloses retrieving and storing data from each IED – Column 2, lines 40-54 and multi-protocol capability - Column 3, lines 13-20).

The motivation and obviousness arguments are the same as in Claim 1.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Blackett et al. and Mathur et al., and further in view of US 2002/0111755 A1 (Valadarsky et al.).

As to Claim 5, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1.

The combination of Blackett et al. and Mathur et al. discloses does not explicitly disclose wherein said global data store is configured to store aggregate information that is periodically updated, wherein the aggregation information provides knowledge of faults in the electric power network, wherein the node element is reconfigured for supporting at least one of the three planes of interaction based on the knowledge, but

Valadarsky et al. disclose wherein said global data store is configured to store aggregate information that is periodically updated, wherein the aggregation information provides knowledge of faults in the electric power network, wherein the node element is reconfigured for supporting at least one of the three planes of interaction based on the knowledge (Valadarsky et al. disclose altering configuration data based upon periodic updates of fault data – Page 8, ¶ [0273]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine wherein said global data store is configured to store aggregate information that is periodically updated, wherein the aggregation information provides knowledge of faults in the electric power network, wherein the node element is reconfigured for supporting at least one of the three planes of interaction based on the knowledge taught by Valadarsky et al., with the three planes of interaction taught by the combination of Blackett et al. and Mathur et al., in order to determine root cause of faults (Valadarsky et al. – Abstract).

9. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Blackett et al. and Mathur et al., and further in view of US 6,640,890 B1 (Dage et al.).

As to Claim 49, the combination of Blackett et al. and Mathur et al. discloses the communications system architecture of claim 1 wherein the node element is operable to expose an existing control interface (Column 5, line 62 through Column 6, line 23

disclose the IED controlling its associated load; Blackett et al. disclose the controlling interface of an IED (Figure 2a, element 220).

The combination of Blackett et al. and Mathur et al. discloses does not explicitly disclose that is for controlling at least one operational function of a HVAC system or a domestic hot water heater, but Dage te al. disclose that is for controlling at least one operational function of a HVAC system or a domestic hot water heater (Dage et al. disclose power control of an HVAC system - Column 1, lines 26-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine controlling at least one operational function of a HVAC system taught by Dage et al., with the node element is operable to expose an existing control interface taught by the combination of Blackett et al. and Mathur et al., in order to control zones of a load device (Dage et al. - Column 1, lines 18-24).

10. Claims 50 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Blackett et al. and Mathur et al., and further in view of Non-Patent Literature from Newsbytes Inc. entitled TECO & IBM - The "Smart House" Is Here" published 4/13/1995 (2 pages) (Newsbytes).

As to Claim 50, the combination of Blackett et al. and Mathur et al. discloses the method of claim 35, wherein the source and destination devices are {IEDs}, wherein the globally available local interface universally formats a) data and commands from the source device and complying with a first protocol and b) data and commands from the

destination device and complying with a second protocol (Blackett et al. disclose data communications interfaces, not the power management circuitry performing the IED communication functions – Figures 1 and 2a, element 213; All data is transferred via some protocol, and hence at least some portion of the data transferred conforms to said protocol which is formatted according to that protocol - Abstract discloses IM communication protocol; Column 7, lines 15-20 disclose a plurality of protocols used).

The combination of Blackett et al. and Mathur et al. does not explicitly disclose home appliances, but references the Newsbytes Non-Patent Literature which discloses home appliances (Newsbytes discloses the Shubox used to control power load of home appliances – Page 1, fifth full paragraph).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine control of home appliances taught by Newsbytes, with IED power management taught by the combination of Blackett et al. and Mathur et al., in order to provide consumer smart-house capability (Newsbytes – Page 1, first full paragraph).

As to Claim 51, the combination of Blackett et al. and Mathur et al. discloses the apparatus of claim 42, wherein the source and destination devices are {IEDs}, wherein the globally available local interface universally formats a) data and commands from the source device and complying with a first protocol and b) data and commands from the destination device and complying with a second protocol (Blackett et al. disclose data communications interfaces, not the power management circuitry performing the IED

communication functions – Figures 1 and 2a, element 213; All data is transferred via some protocol, and hence at least some portion of the data transferred conforms to said protocol which is formatted according to that protocol - Abstract discloses IM communication protocol; Column 7, lines 15-20 disclose a plurality of protocols used).

The combination of Blackett et al. and Mathur et al. does not explicitly disclose home appliances, but references the Newsbytes Non-Patent Literature which discloses home appliances (Newsbytes discloses the Shubox used to control power load of home appliances – Page 1, fifth full paragraph).

The motivation and obviousness arguments are the same as in Claim 50.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These include were included in a prior Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD G. KEEHN whose telephone number is (571)270-5007. The examiner can normally be reached on Monday through Thursday, 9am - 8pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RGK

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